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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,830	07/21/2003	Glenn Ratificar	42P12684C	6572

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EXAMINER

EDMONDSON, LYNNE RENEE

ART UNIT PAPER NUMBER

1725

DATE MAILED: 08/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/624,830

Applicant(s)

RATIFICAR ET AL.

Examiner

Lynne Edmondson

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 5/18/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 14-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 16-22 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The material to be processed, particularly the solder shape and composition, does not further limit the apparatus. A sweeping frequency is variable. Appropriate correction is required.

As previously stated, for examination purposes, the independent claim is presumed to be an apparatus for providing microwave heat.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 14-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not clear whether a method, an article or an apparatus is intended to be the invention. The claims contain apparatus, method and article limitations. The amendment does not clarify this issue but rather adds another method limitation in line 16 that the join is disposed in an inert atmosphere. As previously stated for examination

purposes, the independent claim will be presumed to be an apparatus for providing microwave heat. The Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 14-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strauss et al. (USPN 5932075) in view of Collins et al. (RE 34373).

Strauss teaches a heating apparatus comprising a magnetron with a variable power supply which is presumed to be capable of generating variable frequencies and sweeping, a waveguide disposed proximate said magnetron, a stirrer disposed proximate said waveguide and a susceptor disposed proximate said stirrer (col 2 lines 45-52 and col 3 line 33 – col 4 line 4). An inert gas may be present (col 11 lines 42-45). It is noted that the shape and composition of solder used does not further limit the apparatus. It is noted that a screen-printed bump would have similar characteristics as an electroplated bump. However there is no disclosure of a conveyor.

Collins teaches a microwave heating apparatus with a conveyor (turntable), magnetron (col 2 lines 35-50), stirrers, and a wave guide wherein the microwave energy has a variable frequency (col 3 lines 16-62).

It would have been obvious to one of ordinary skill in the art at the time of the invention that an automated, continuous process is an obvious variation of a batch process and that a conveyor for facilitate automation.

6. Claims 14-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strauss et al. (USPN 5932075) in view of Kilgore et al. (USPN 6497786 B1).

Strauss teaches a heating apparatus comprising a magnetron with a variable power supply which is presumed to be capable of generating variable frequencies and sweeping, a waveguide disposed proximate said magnetron, a stirrer disposed proximate said waveguide and a susceptor disposed proximate said stirrer (col 2 lines 45-52 and col 3 line 33 – col 4 line 4). An inert gas may be present (col 11 lines 42-45). A joint formed by convection reflow has same structure and properties as a microwave reflow joint. However in the instant claims the assembly could presumably be exposed to microwave radiation in the future, no exposure has occurred at this point. It is noted that the shape and composition of solder used does not further limit the apparatus. It is noted that a screen-printed bump would have similar characteristics as an electroplated bump. However there is no disclosure of a conveyor.

Kilgore teaches a microwave heating apparatus with a conveyor (col 3 lines 26-40) and magnetron wherein the variable microwave generator is capable of sweeping a range of frequencies (col 7 line 59 – col 8 line 18).

It would have been obvious to one of ordinary skill in the art at the time of the invention that an automated, continuous process is an obvious variation of a batch process and that a conveyor for facilitate automation.

7. Claims 14-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bible et al. (USPN 5961871) in view of Kilgore et al. (USPN 6497786 B1).

Bible teaches a variable frequency microwave heating apparatus comprising a magnetron with a variable power supply which is capable of generating variable frequencies and sweeping (col 3 lines 54-59), a waveguide disposed proximate said magnetron, a stirrer disposed proximate said waveguide and a susceptor disposed proximate said stirrer (figure 6, col 6 lines 23-57, col 12 lines 51-64 and col 13 lines 22-39). An inert gas may be present (col 14 lines 38-46). It is noted that the shape and composition of solder used does not further limit the apparatus. It is noted that a screen-printed bump would have similar characteristics as an electroplated bump. However there is no disclosure of a conveyor.

Kilgore teaches a microwave heating apparatus with a conveyor (col 3 lines 26-40) and magnetron wherein the variable microwave generator is capable of sweeping a range of frequencies (col 7 line 59 – col 8 line 18).

It would have been obvious to one of ordinary skill in the art at the time of the invention that an automated, continuous process is an obvious variation of a batch process and that a conveyor for facilitate automation.

***Response to Arguments***

8. Applicant's arguments with respect to claims 14 and 15 have been considered but are moot in view of the new ground(s) of rejection.

9. It is noted that the amendment to claims 16-23 has not resolved the objection or the 112 issue. The solder shape and composition does not further limit the soldering apparatus. It is further noted that the addition of the inert atmosphere limitation appears to be another method limitation which raises yet another issue rather than clarifying the previous issue.

Therefore the objection to claims 16-23 stands. The 112 rejection of claims 16-23 also stands.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lauf et al. (USPN 5798395), Fathi et al. (US 2003/0192884 A1, microwave oven) and Wendt et al. (USPN 4927991, microwave heater).

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynne Edmondson whose telephone number is (571) 272-1172. The examiner can normally be reached on Monday through Thursday from 6:30 a.m. to 5 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on (571) 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



Art Unit: 1725

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lynne Edmondson  
Primary Examiner  
Art Unit 1725

*LES*  
*6/3/06*

LRE